6439743

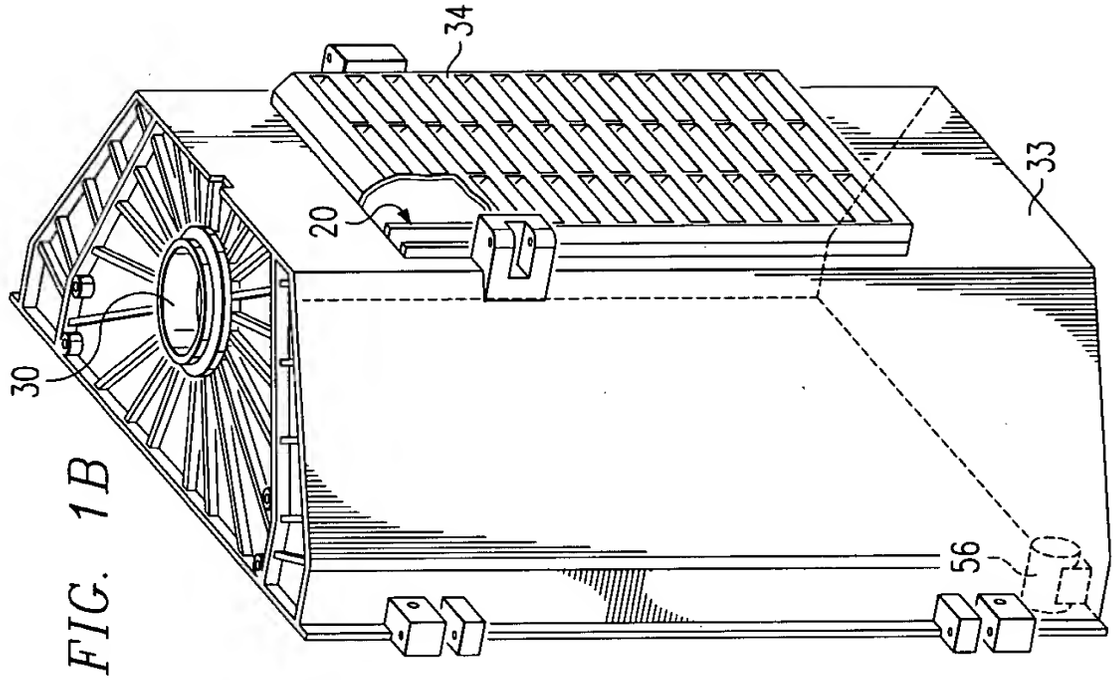


FIG. 1B

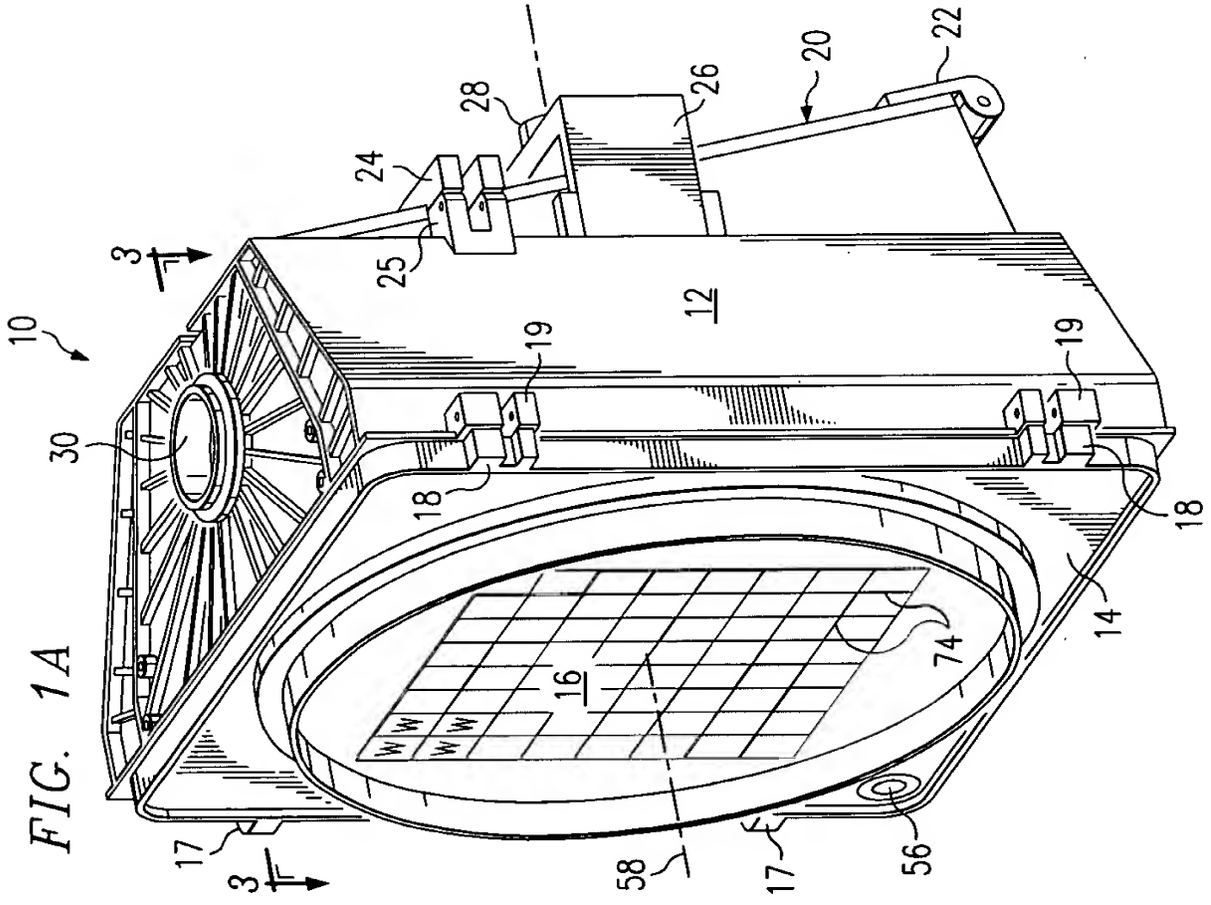


FIG. 1A

FIG. 2B

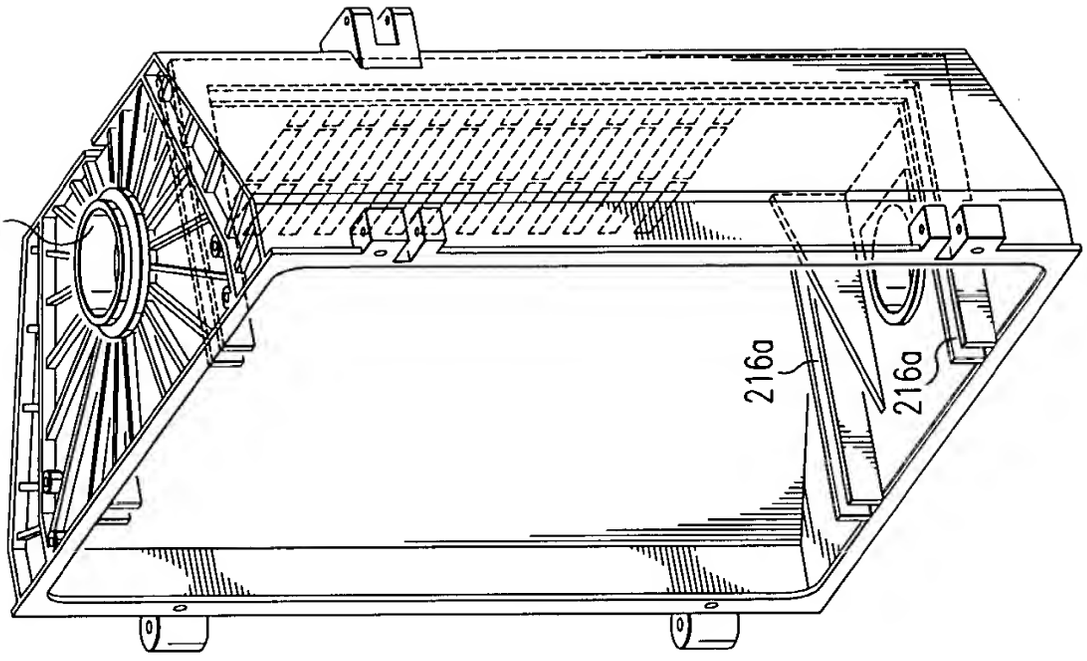


FIG. 2A

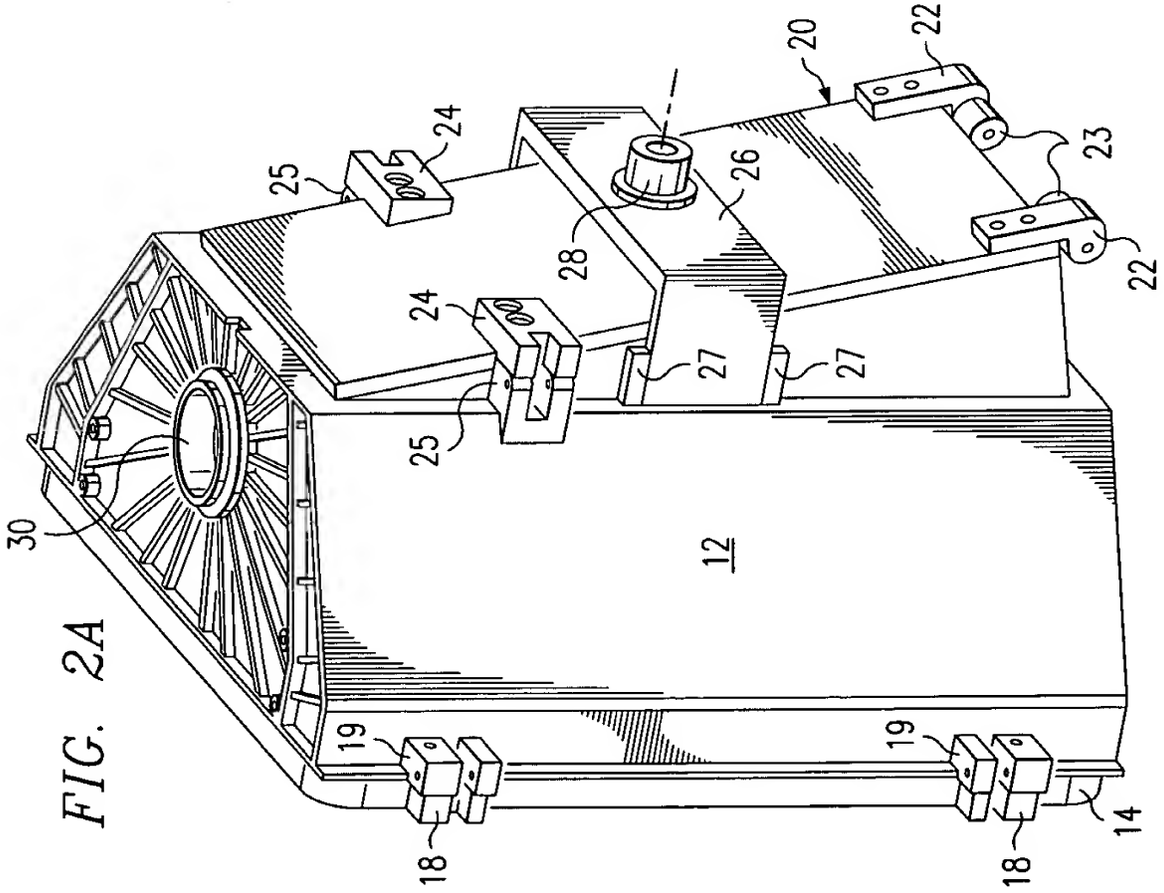
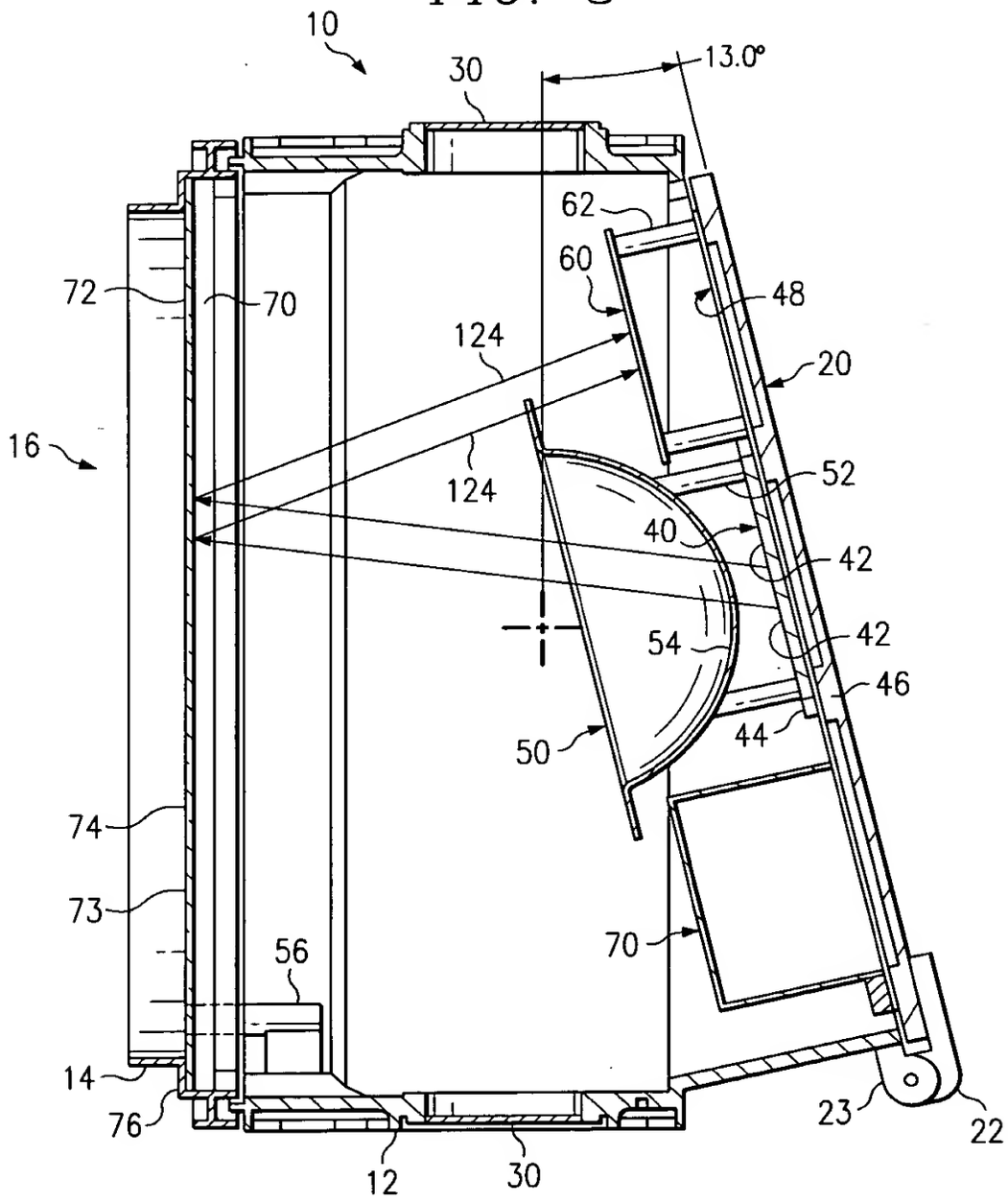


FIG. 3


10
30
13.0°
62
60
48
72
70
124
20
16
124
52
40
42
54
42
46
44
50
74
73
70
56
14
76
12
30
23
22

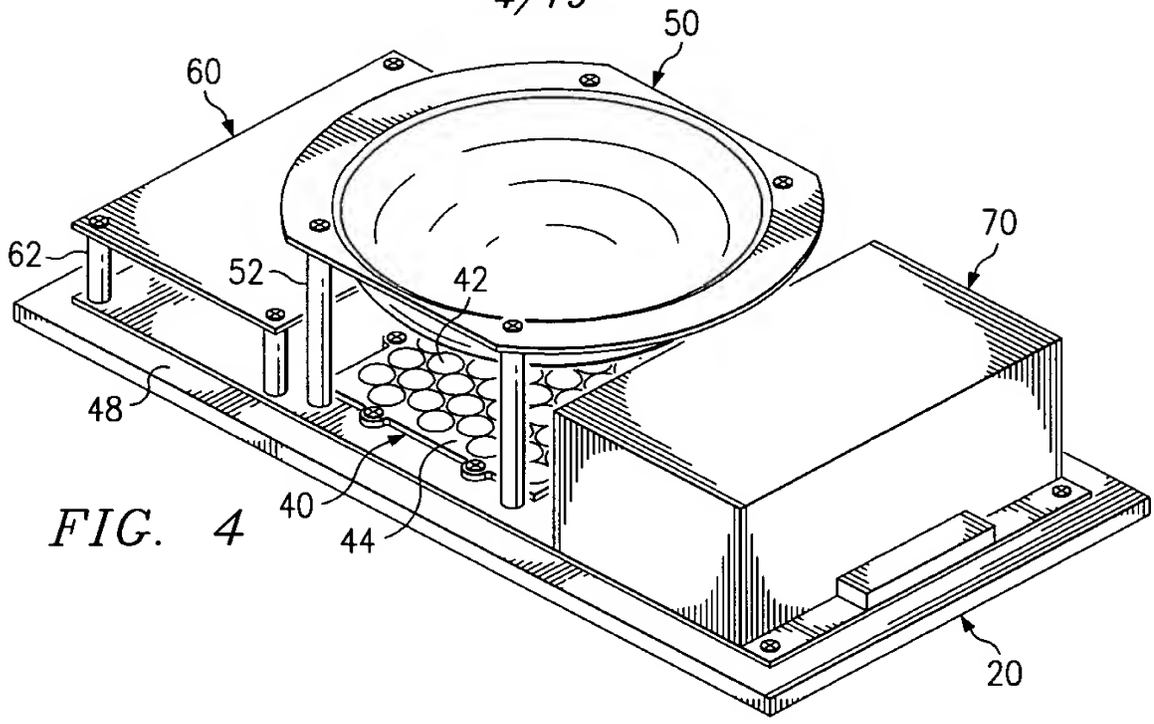


FIG. 4

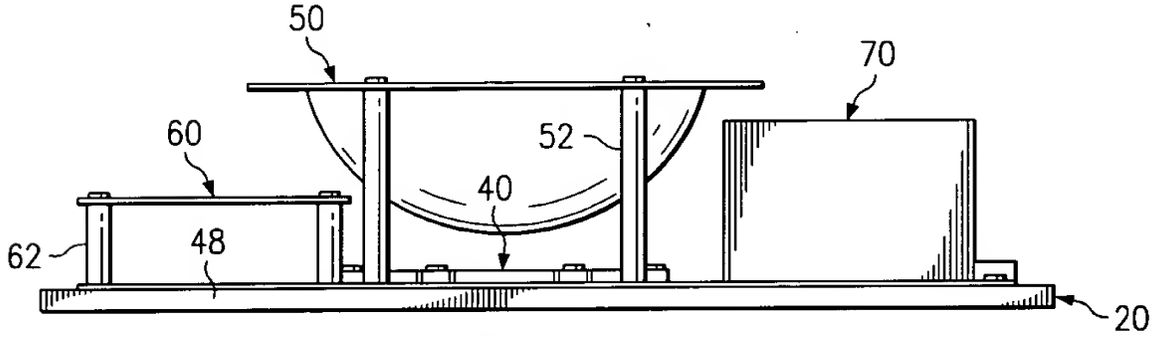


FIG. 5

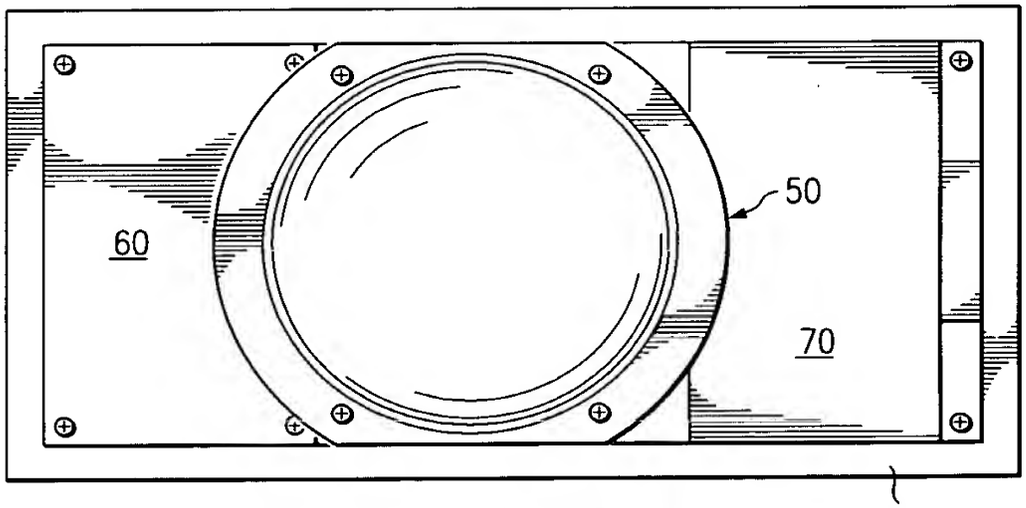


FIG. 6

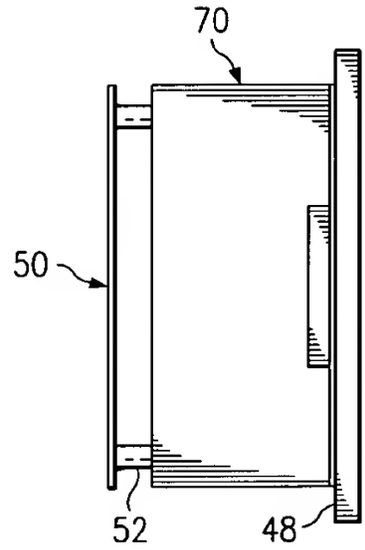
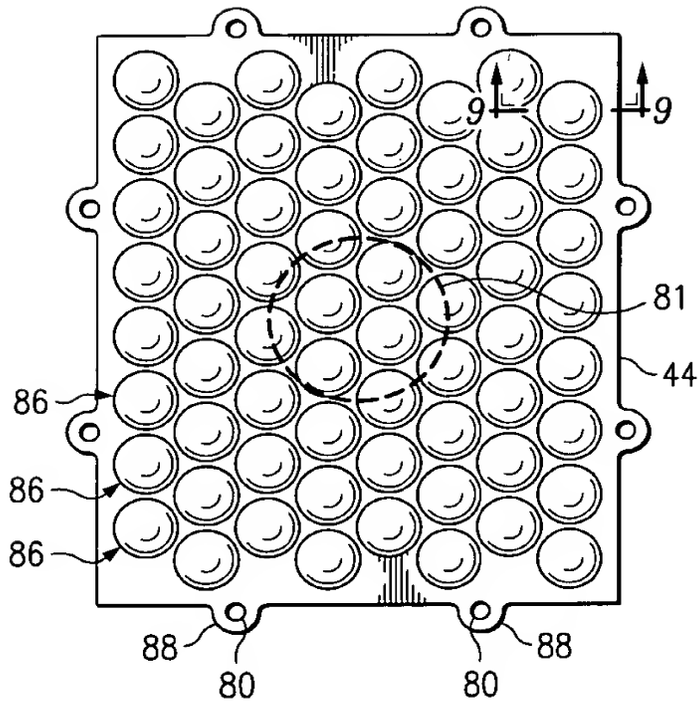


FIG. 7

FIG. 8



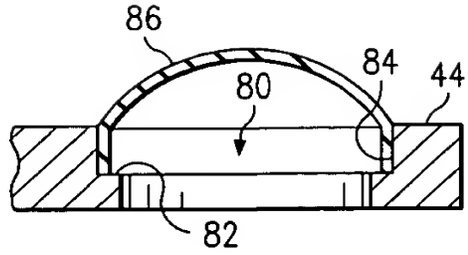
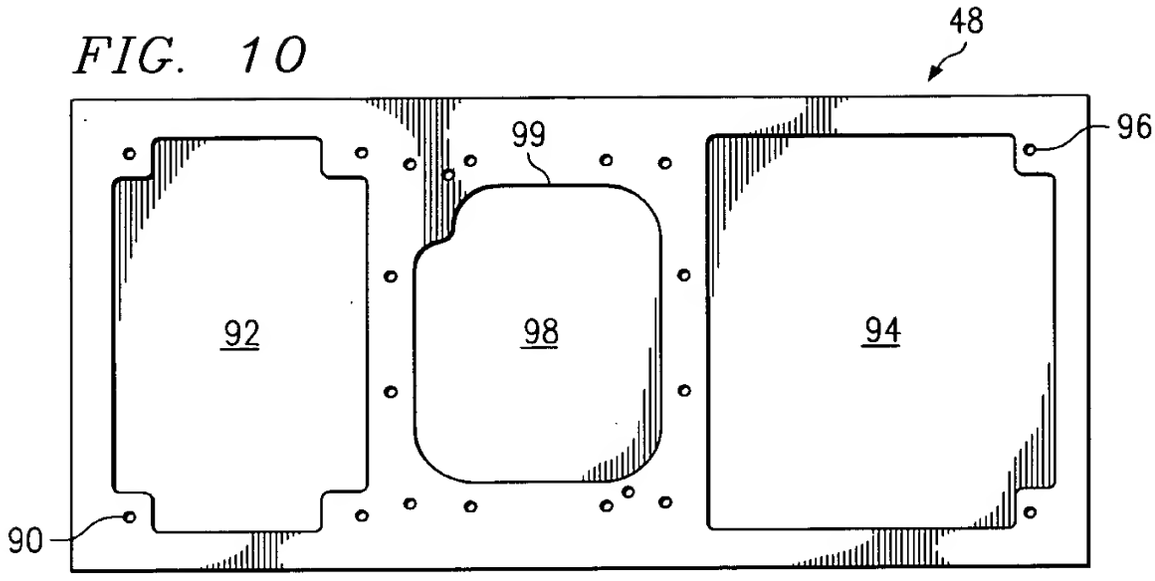


FIG. 9

FIG. 10



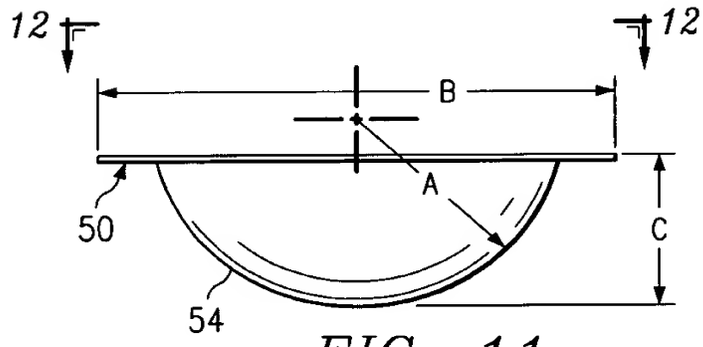


FIG. 11

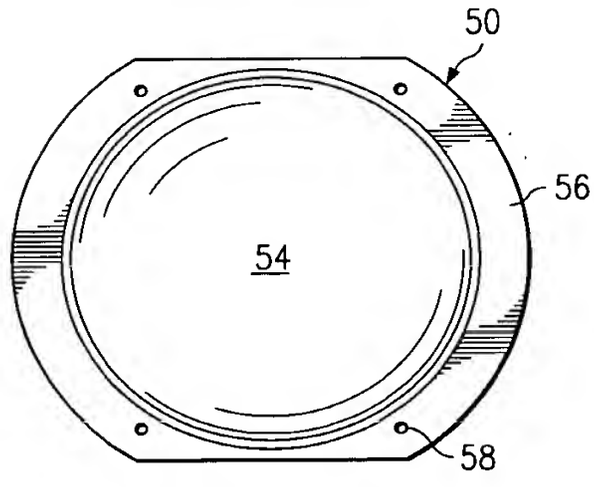


FIG. 12

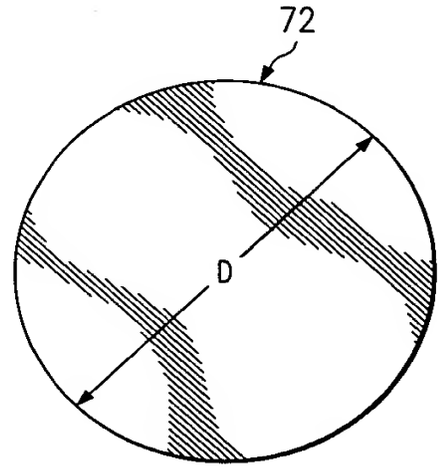


FIG. 13

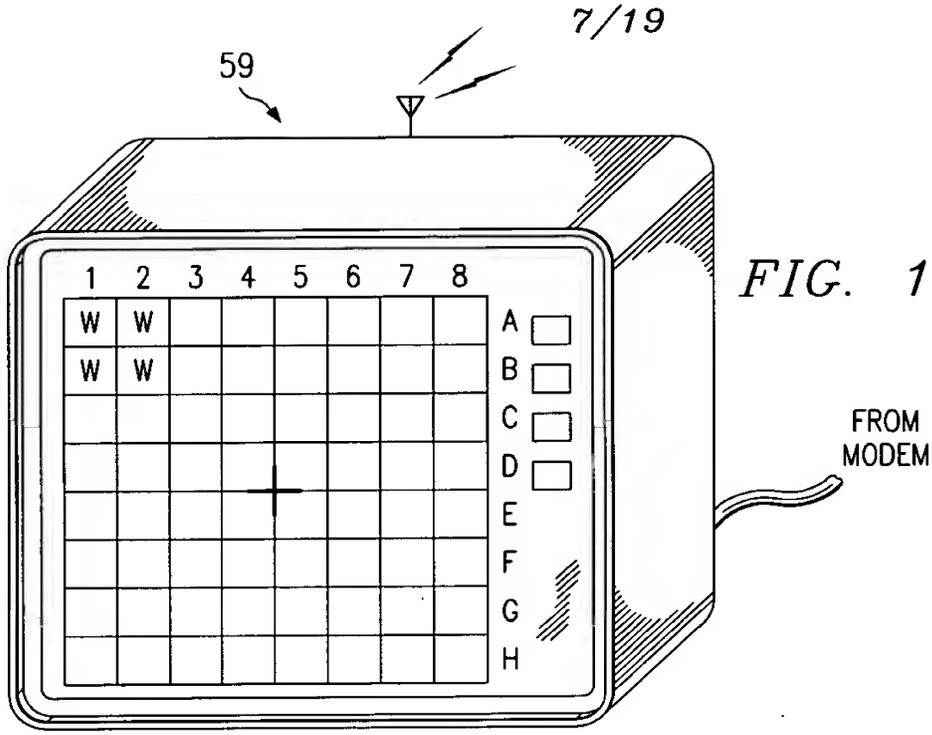


FIG. 14A

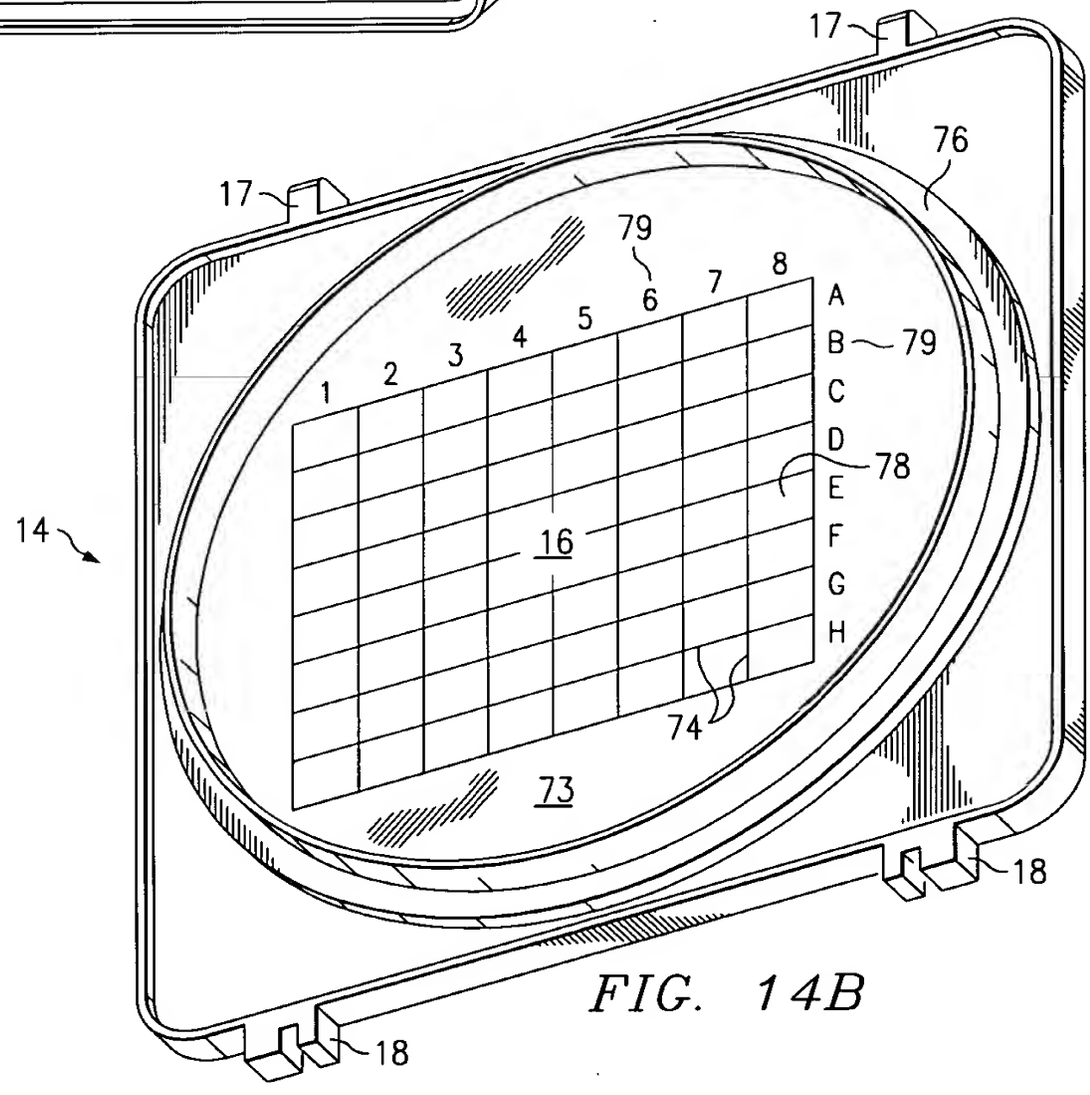


FIG. 14B

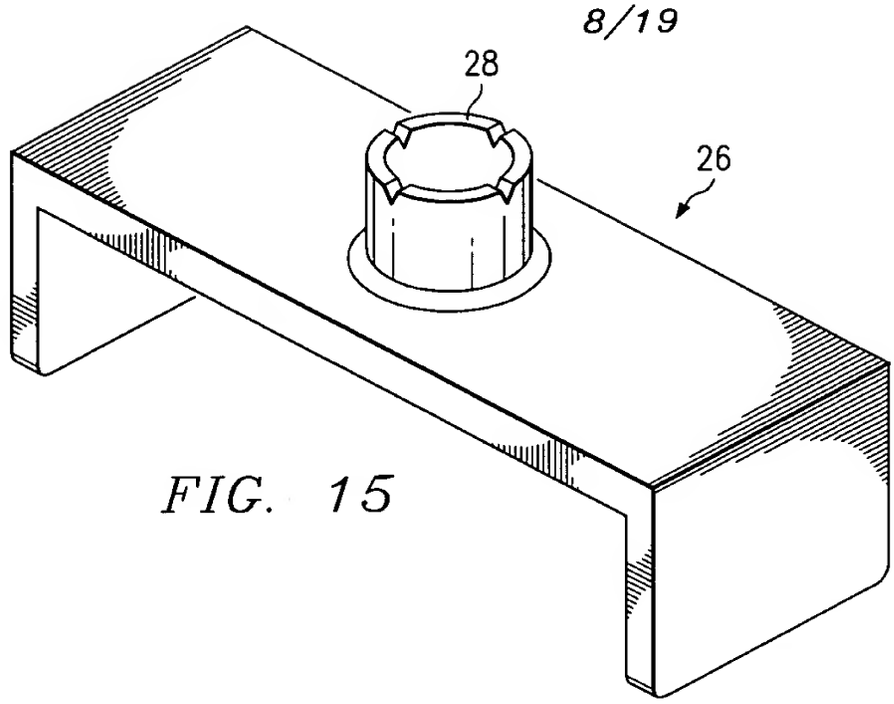


FIG. 15

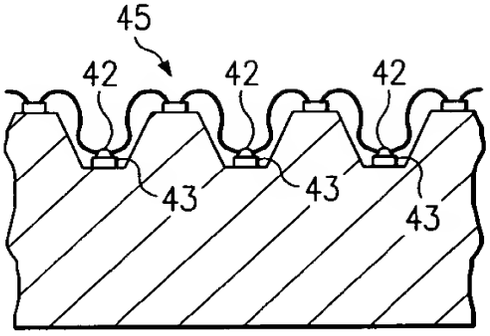


FIG. 18B

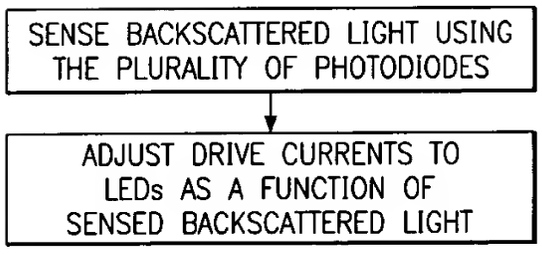


FIG. 17

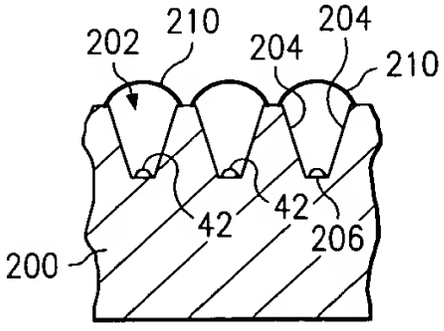


FIG. 18A

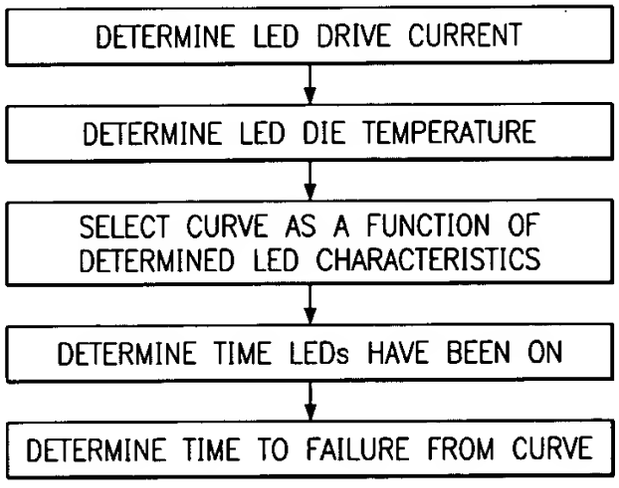


FIG. 19

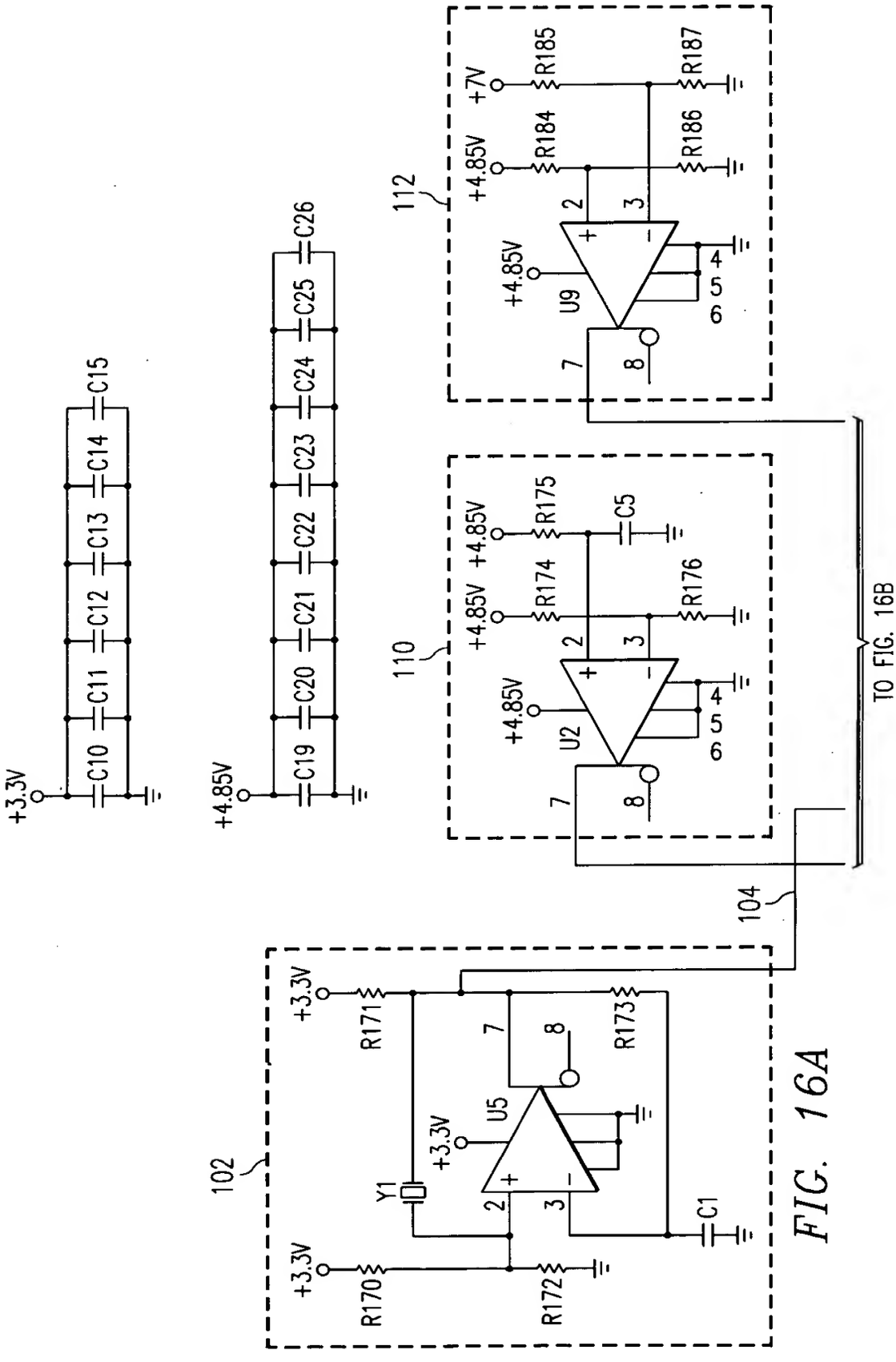

102
104
110
112
+3.3V
+4.85V
+7V
R170
R171
R172
R173
R174
R175
R176
R184
R185
R186
R187
C1
C5
C10
C11
C12
C13
C14
C15
C19
C20
C21
C22
C23
C24
C25
C26
Y1
U2
U5
U9
TO FIG. 16B

FIG. 16A

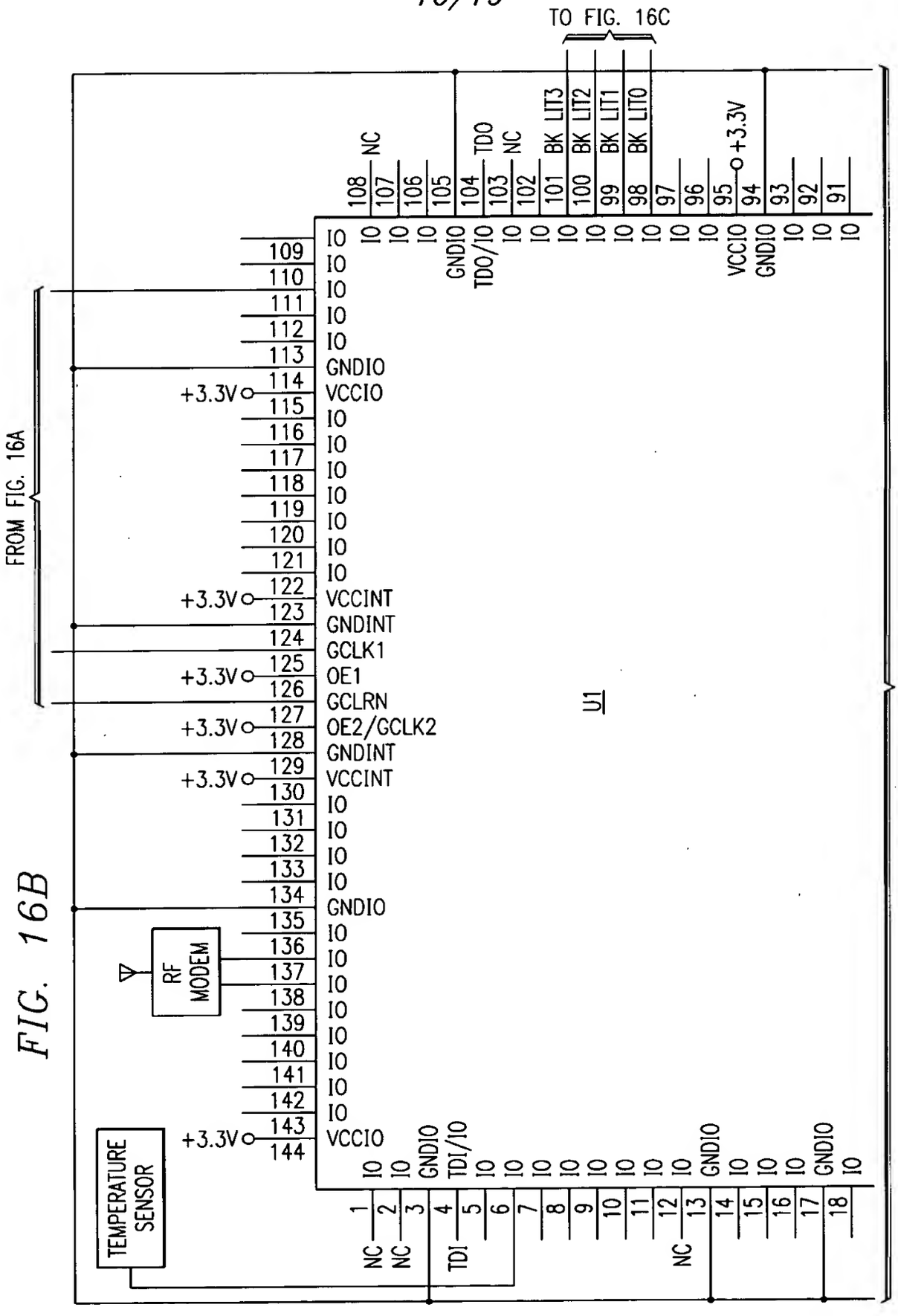
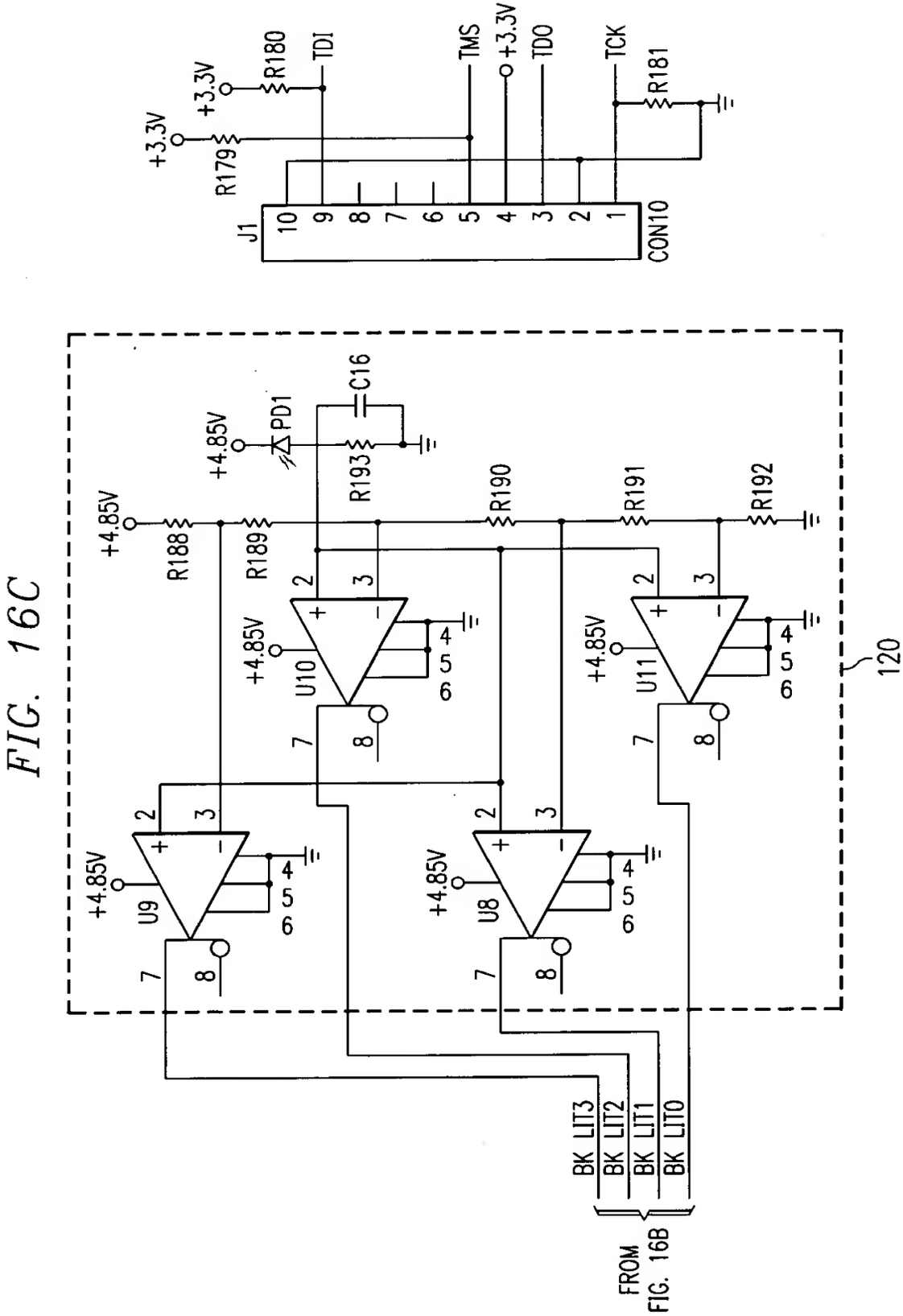

TO FIG. 16C
FROM FIG. 16A
TO FIG. 16D
U1
RF MODEM
TEMPERATURE SENSOR
+3.3V
GNDIO
VCCIO
VCCINT
GNDINT
GCLK1
OE1
GCLRN
OE2/GCLK2
TDO
TDI
TDO/IO
TDI/IO
NC
BK LIT3
BK LIT2
BK LIT1
BK LIT0
IO

FIG. 16B

FIG. 16C


+3.3V
R180
TDI
+3.3V
R179
TMS
+3.3V
TDO
TCK
R181
J1
10
9
8
7
6
5
4
3
2
1
CON10
+4.85V
PD1
C16
R193
+4.85V
R188
R189
R190
R191
R192
U10
U11
U9
U8
120
BK LIT3
BK LIT2
BK LIT1
BK LIT0
FROM FIG. 16B

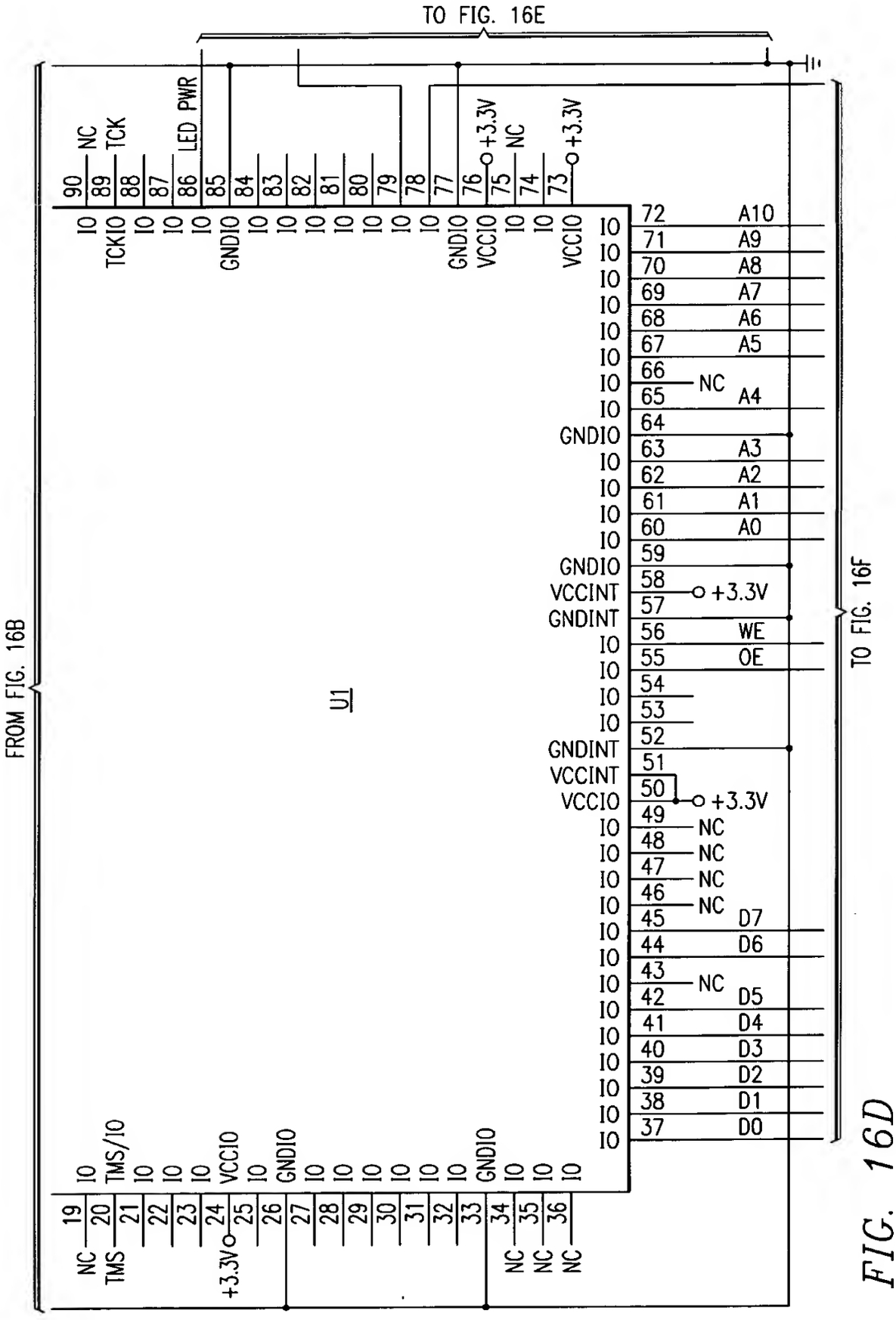

TO FIG. 16E
FROM FIG. 16B
TO FIG. 16F
U1
90 IO NC
89 TCKIO TCK
88 IO
87 IO
86 IO LED PWR
85 GNDIO
84 IO
83 IO
82 IO
81 IO
80 IO
79 IO
78 IO
77 GNDIO
76 VCCIO +3.3V
75 IO NC
74 IO
73 VCCIO +3.3V
72 IO A10
71 IO A9
70 IO A8
69 IO A7
68 IO A6
67 IO A5
66 IO NC
65 IO A4
64 GNDIO
63 IO A3
62 IO A2
61 IO A1
60 IO A0
59 GNDIO
58 VCCINT +3.3V
57 GNDINT
56 IO WE
55 IO OE
54 IO
53 IO
52 GNDINT
51 VCCINT
50 VCCIO +3.3V
49 IO NC
48 IO NC
47 IO NC
46 IO NC
45 IO D7
44 IO D6
43 IO NC
42 IO D5
41 IO D4
40 IO D3
39 IO D2
38 IO D1
37 IO D0
19 NC
20 IO TMS/IO
21 TMS
22 IO
23 IO
24 IO
25 +3.3V VCCIO
26 IO
27 GNDIO
28 IO
29 IO
30 IO
31 IO
32 IO
33 IO
34 GNDIO
35 NC IO
36 NC IO
NC IO

FIG. 16D

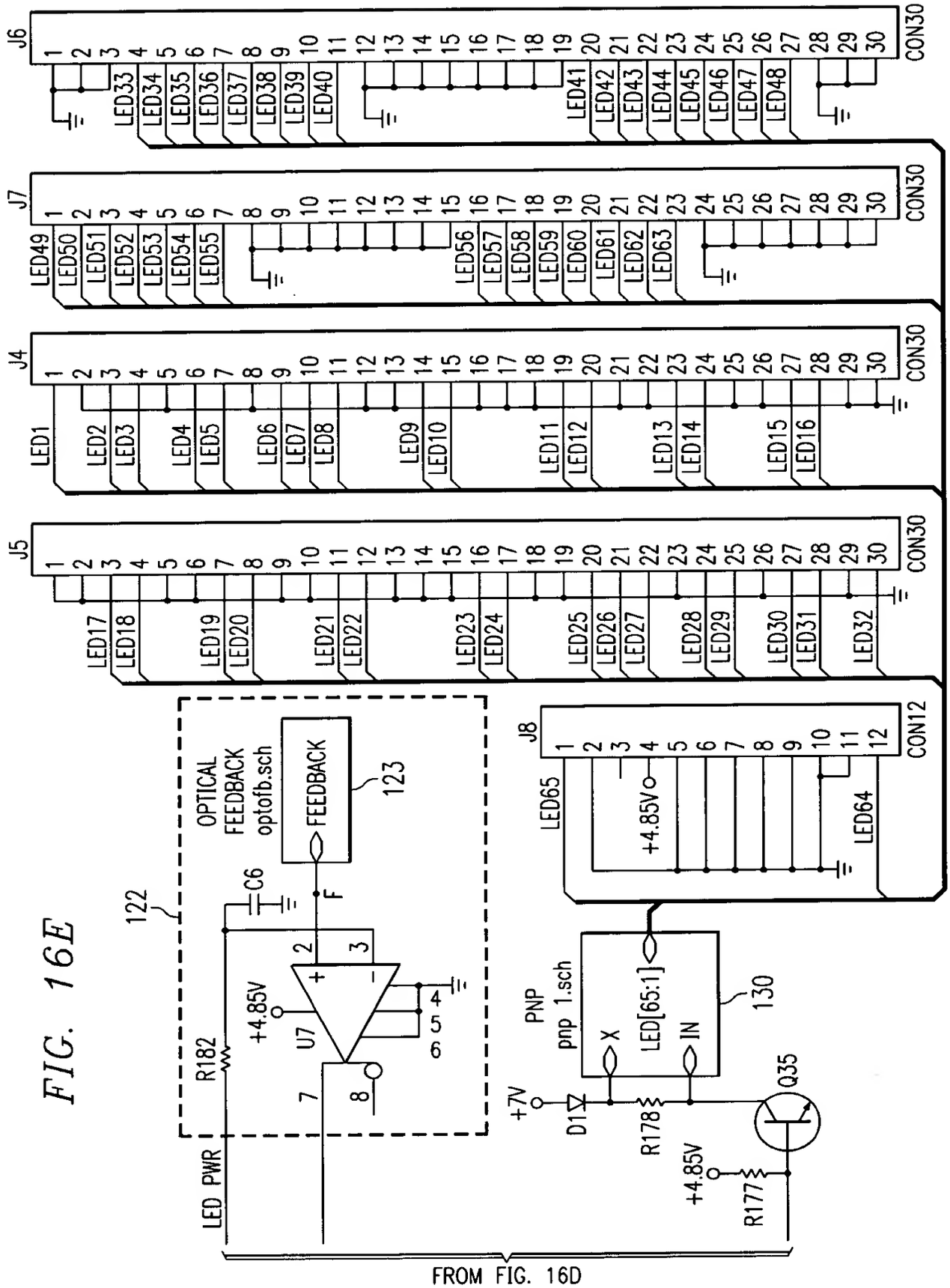

J6
CON30
LED33 LED34 LED35 LED36 LED37 LED38 LED39 LED40 LED41 LED42 LED43 LED44 LED45 LED46 LED47 LED48
J7
CON30
LED49 LED50 LED51 LED52 LED53 LED54 LED55 LED56 LED57 LED58 LED59 LED60 LED61 LED62 LED63
J4
CON30
LED1 LED2 LED3 LED4 LED5 LED6 LED7 LED8 LED9 LED10 LED11 LED12 LED13 LED14 LED15 LED16
J5
CON30
LED17 LED18 LED19 LED20 LED21 LED22 LED23 LED24 LED25 LED26 LED27 LED28 LED29 LED30 LED31 LED32
J8
CON12
LED65
+4.85V
LED64
122
OPTICAL FEEDBACK
optofb.sch
FEEDBACK
123
C6
F
R182
+4.85V
U7
LED PWR
PNP
pnp 1.sch
X
LED[65:1]
IN
130
+7V
D1
R178
Q35
+4.85V
R177
FROM FIG. 16D

FIG. 16E

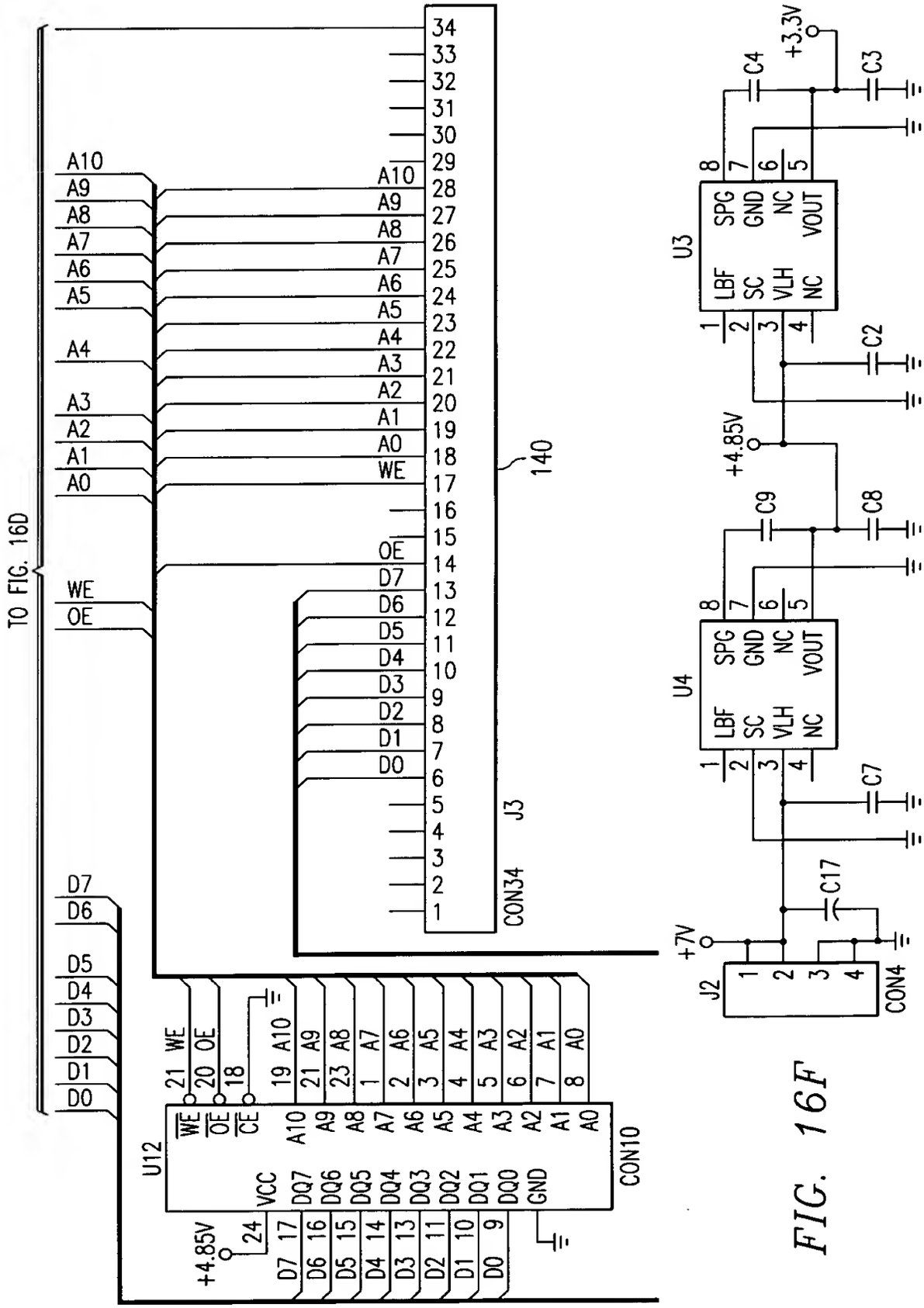

TO FIG. 16D
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
WE
OE
D7
D6
D5
D4
D3
D2
D1
D0
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
140
J3
CON34
U12
CON10
VCC
GND
+4.85V
+3.3V
+7V
U3
U4
SPG
GND
NC
VOUT
LBF
SC
VLH
C2
C3
C4
C7
C8
C9
C17
J2
CON4

FIG. 16F

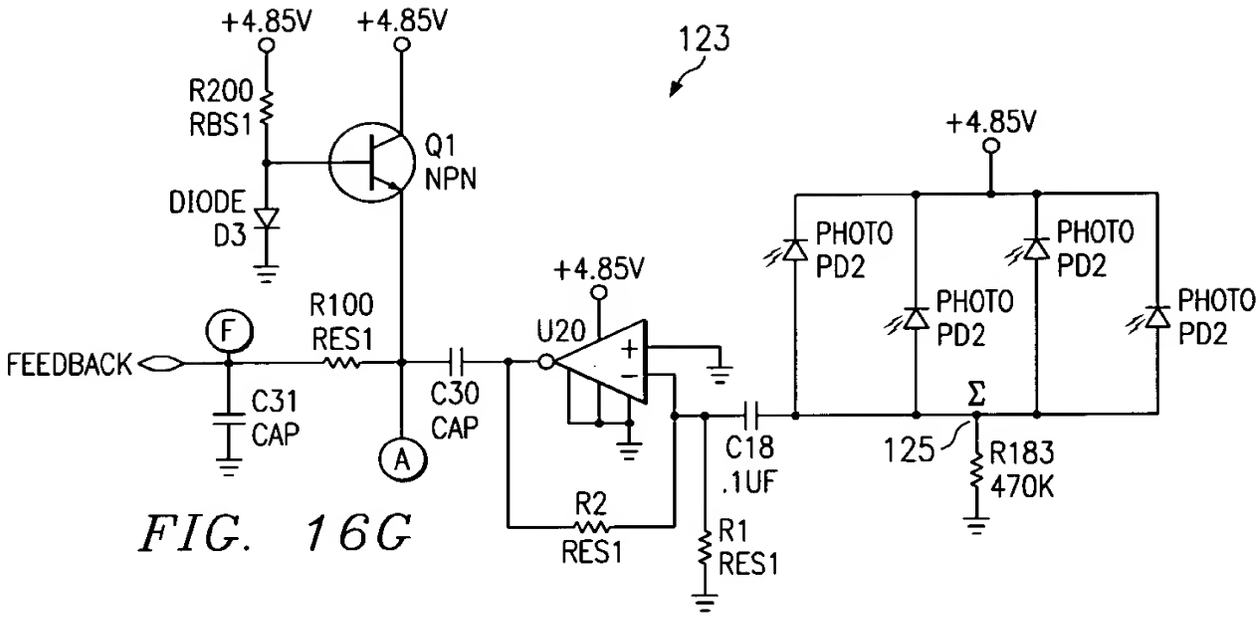


FIG. 16G

FIG. 16I

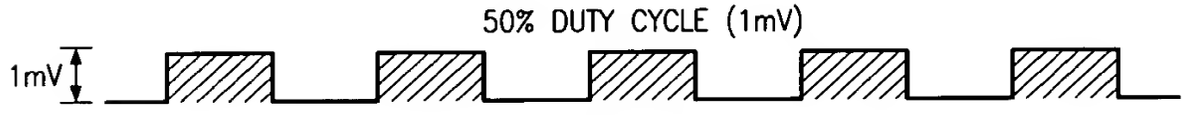


FIG. 16J

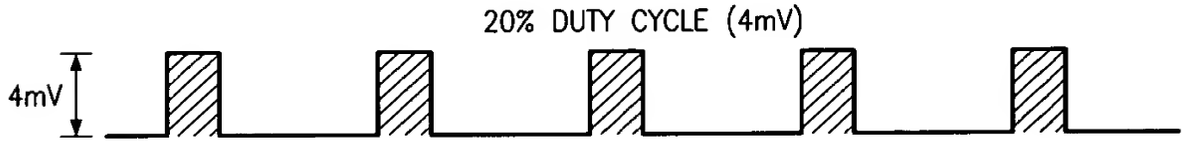


FIG. 16K

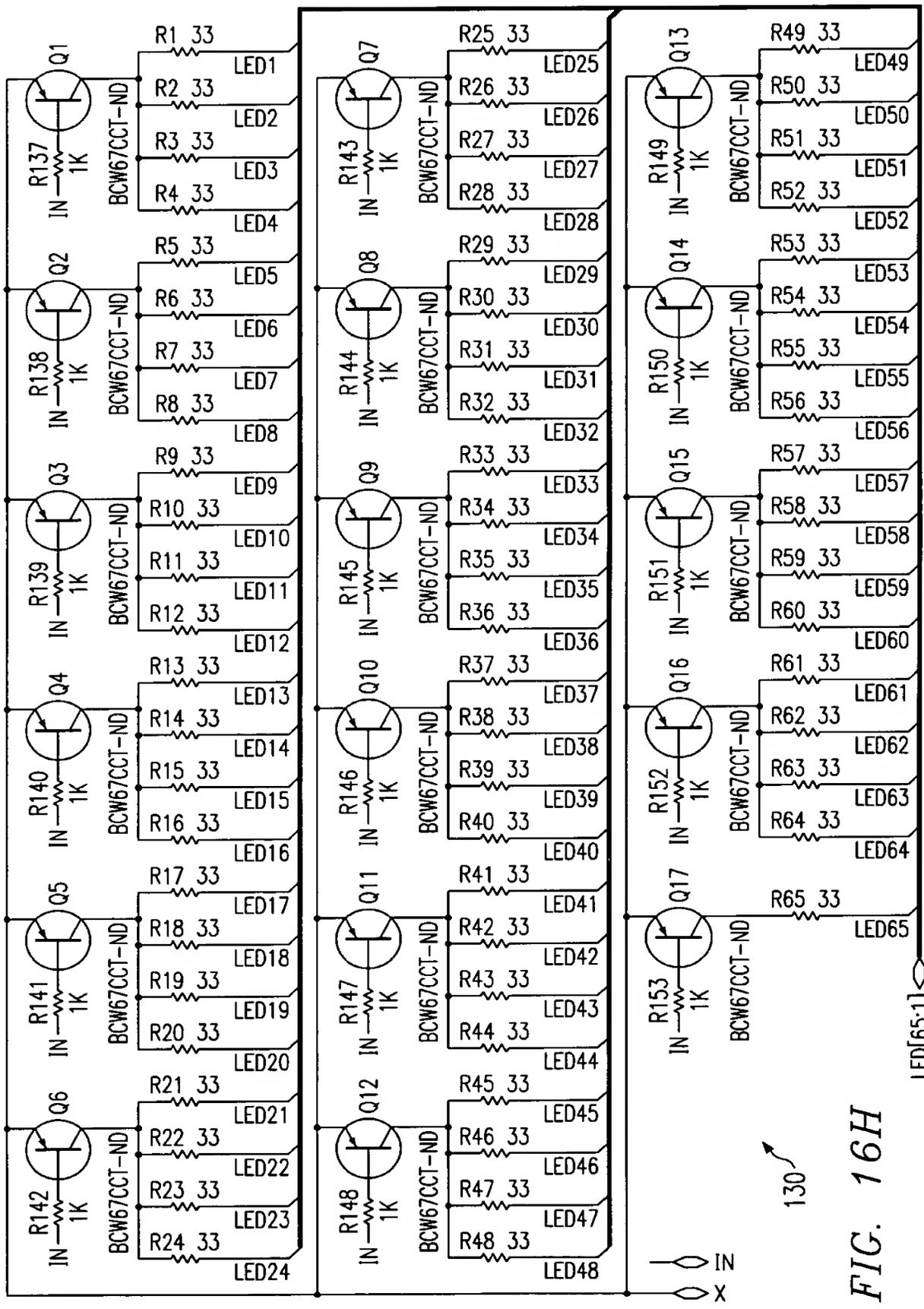

Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
R137 1K
R138 1K
R139 1K
R140 1K
R141 1K
R142 1K
R143 1K
R144 1K
R145 1K
R146 1K
R147 1K
R148 1K
R149 1K
R150 1K
R151 1K
R152 1K
R153 1K
IN
BCW67CCT-ND
R1 33
R2 33
R3 33
R4 33
R5 33
R6 33
R7 33
R8 33
R9 33
R10 33
R11 33
R12 33
R13 33
R14 33
R15 33
R16 33
R17 33
R18 33
R19 33
R20 33
R21 33
R22 33
R23 33
R24 33
R25 33
R26 33
R27 33
R28 33
R29 33
R30 33
R31 33
R32 33
R33 33
R34 33
R35 33
R36 33
R37 33
R38 33
R39 33
R40 33
R41 33
R42 33
R43 33
R44 33
R45 33
R46 33
R47 33
R48 33
R49 33
R50 33
R51 33
R52 33
R53 33
R54 33
R55 33
R56 33
R57 33
R58 33
R59 33
R60 33
R61 33
R62 33
R63 33
R64 33
R65 33
LED1
LED2
LED3
LED4
LED5
LED6
LED7
LED8
LED9
LED10
LED11
LED12
LED13
LED14
LED15
LED16
LED17
LED18
LED19
LED20
LED21
LED22
LED23
LED24
LED25
LED26
LED27
LED28
LED29
LED30
LED31
LED32
LED33
LED34
LED35
LED36
LED37
LED38
LED39
LED40
LED41
LED42
LED43
LED44
LED45
LED46
LED47
LED48
LED49
LED50
LED51
LED52
LED53
LED54
LED55
LED56
LED57
LED58
LED59
LED60
LED61
LED62
LED63
LED64
LED65
LED[65:1]
IN
X
130

FIG. 16H

FIG. 20

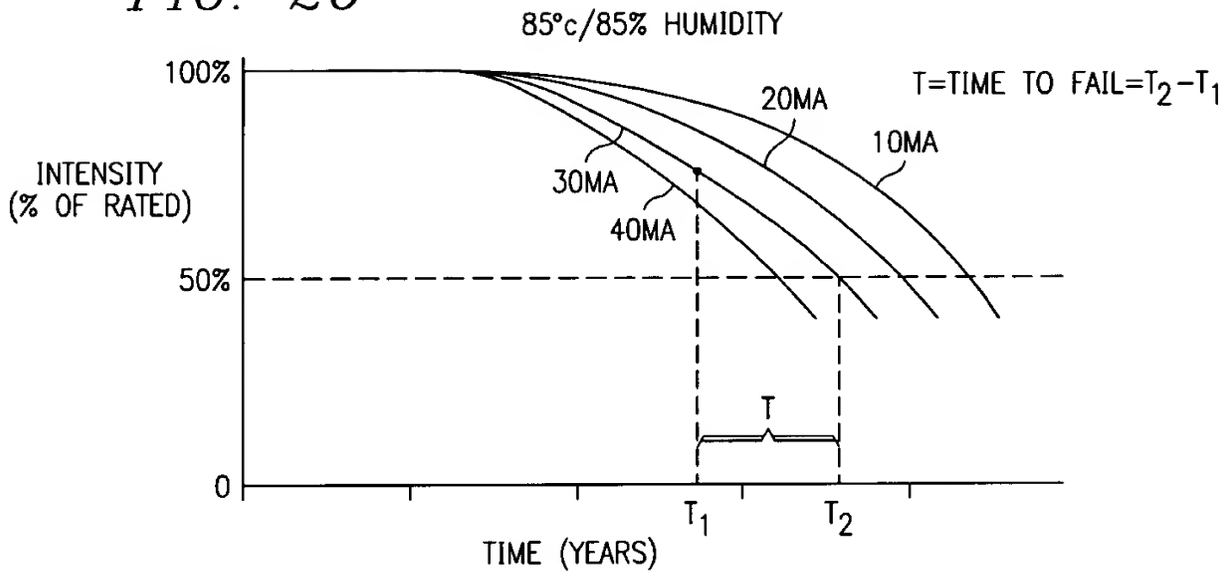
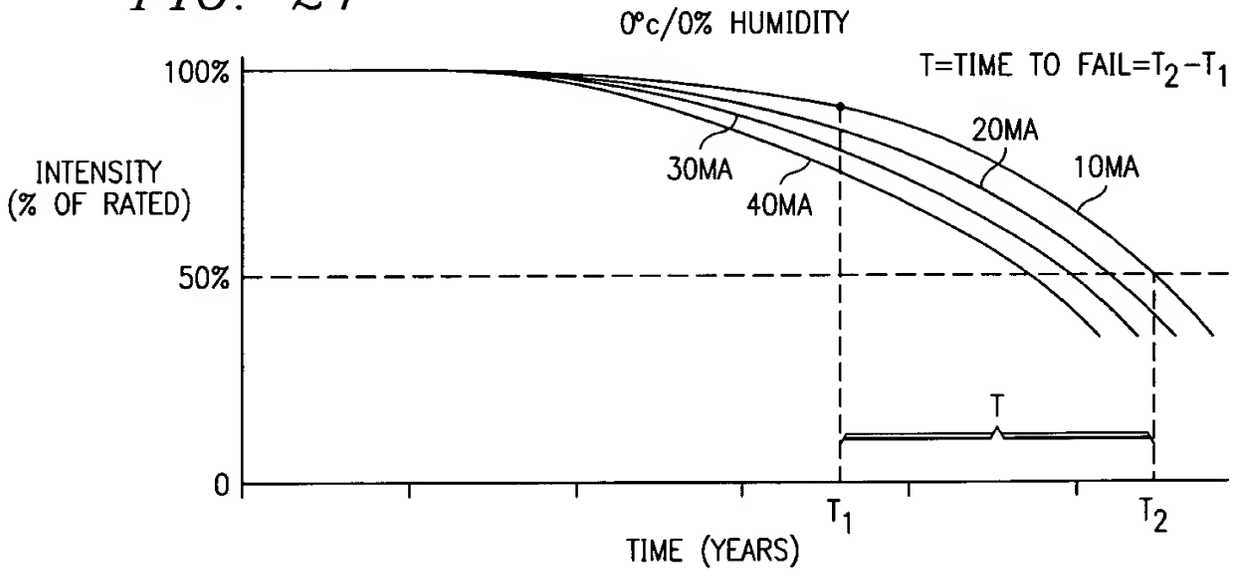

85°c/85% HUMIDITY
T=TIME TO FAIL=T_2-T_1
100%
50%
0
INTENSITY
(% OF RATED)
20MA
10MA
30MA
40MA
T
T_1
T_2
TIME (YEARS)

FIG. 21


0°c/0% HUMIDITY
T=TIME TO FAIL=T_2-T_1
100%
50%
0
INTENSITY
(% OF RATED)
20MA
10MA
30MA
40MA
T
T_1
T_2
TIME (YEARS)

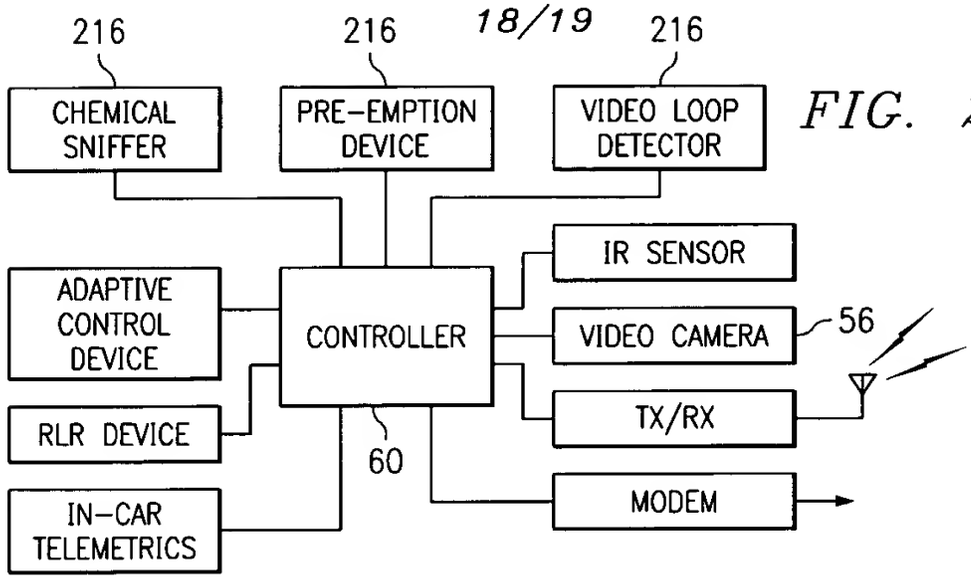


FIG. 22

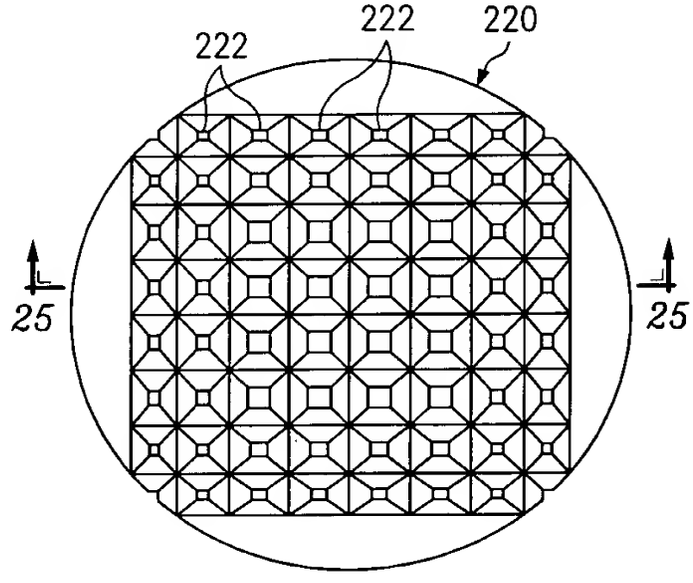


FIG. 24

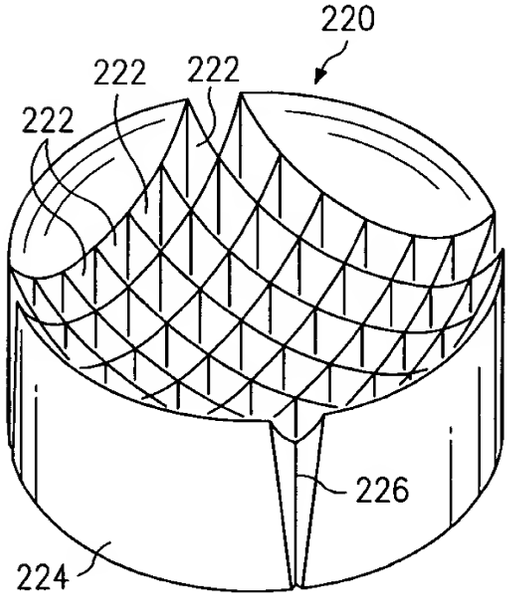


FIG. 23

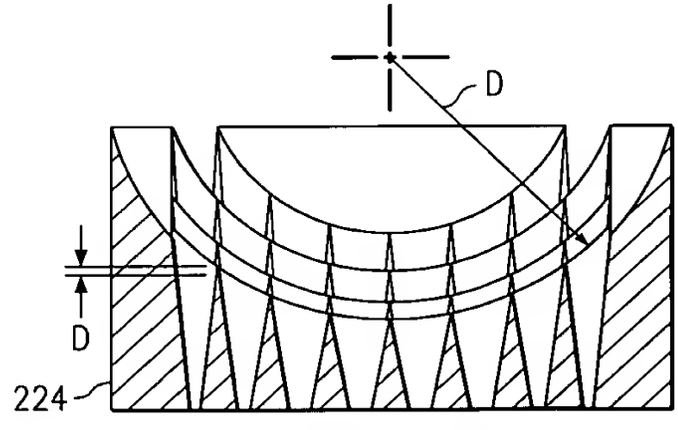


FIG. 25

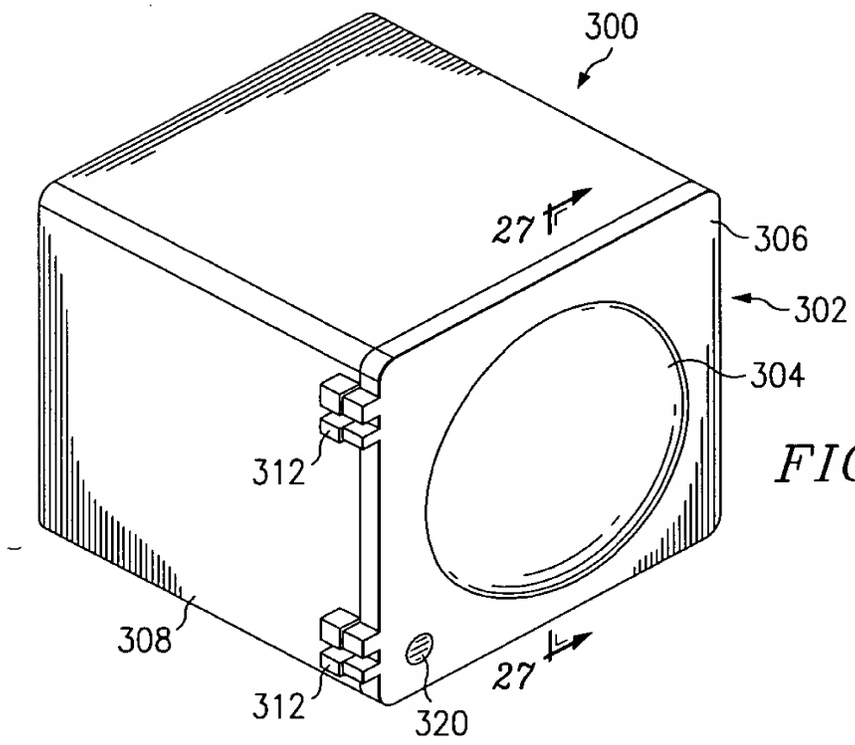


FIG. 26

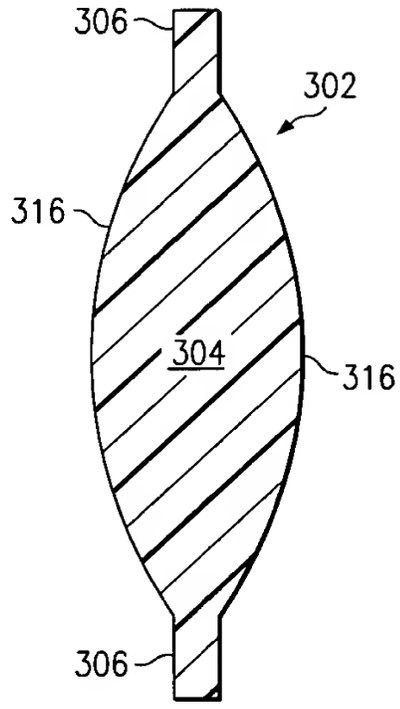


FIG. 27